

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A controller comprising:

a control circuit comprising:

a forward path that includes an input and an output;

a feedback path coupled to the output and to the input; and

a sensor, which is between the input and the output, the sensor for

generating a sensor signal;

an error signal generator ~~that generates~~ to generate an error signal and ~~that provides to~~ provide the error signal to the control circuit, wherein the forward path ~~generates~~ is configured to generate an output signal based on the sensor signal and the error signal, the output signal being sent along the feedback path to the input of the forward path; and

a detector ~~that obtains~~ to obtain an intermediate signal from the forward path between the input and the output, the detector for generating a control signal based on the intermediate signal;

wherein the forward path comprises a control device ~~that limits~~ to limit the output signal to a predetermined value, the detector for controlling the control device using the control signal.

2. (Currently Amended) The controller of claim 1, wherein the detector comprises:

a storage device ~~that stores~~ to store a measurement signal; and

a comparator ~~that compares~~ to compare the intermediate signal to the measurement signal and ~~that outputs~~ to output a comparator signal.

3. (Currently Amended) The controller of claim 2, wherein the detector further comprises:

decision logic ~~that receives~~ to receive the comparator signal and ~~that controls~~ to control the control device in accordance with the comparator signal.

4. (Previously Presented) The controller of claim 1, wherein the control device comprises a clamp circuit.

5. (Previously Presented) The controller of claim 2, wherein the comparator comprises at least one of a signal level comparator and a signal sign comparator.

6. (Currently Amended) The controller of claim 1, further comprising:
a time signal generator ~~that generates~~ to generate a time signal output, wherein the error signal generator ~~generates~~ is configured to generate the error signal based on the time signal output.

7. (Previously Presented) The controller of claim 1, wherein the sensor comprises a magnetoresistive sensor.

8. (Previously Presented) A method of operating a controller comprised of:

a forward path that includes an input and an output;

a feedback path coupled to the output and to the input; and

a sensor, which is between the input and the output, the sensor generating

a sensor signal, the forward path generating an output signal based on the sensor

signal, the output signal being applied to the input of the forward path via the

feedback path;

wherein the method comprises:

obtaining an intermediate signal from the forward path between the input and the

output;

generating a comparison signal by comparing the intermediate signal to a stored
measurement signal;

generating a control signal based on the comparison signal; and

applying the control signal to a control device in the forward path, the control
device limiting the output signal to a predetermined value in response to the control
signal.

9. (Previously Presented) The method of claim 8, wherein the measurement signal is
stored in a storage device, and comparing is performed using a comparator.

10. (Previously Presented) The method of claim 8, wherein the control signal is generated via decision logic, the decision logic being controlled by the comparison signal, the decision logic generating the control signal if a predetermined criterion is satisfied.

11. (Previously Presented) The method of claim 9, wherein the comparator comprises at least one of a signal sign comparator and a signal level comparator.

12. (Previously Presented) The method of claim 10, further comprising:
generating an error signal based on an output of a time signal generator and an output of the decision logic; and

applying the error signal to the forward path, the intermediate signal being based on both the sensor signal and the error signal.

13. (Previously Presented) The method of claim 1, wherein the control signal comprise a signal output of the detector.

14. (Previously Presented) The controller of claim 1, wherein the sensor generates the sensor signal based on one or more input signals applied to the input of the forward path.

15. (Previously Presented) The method of claim 8, wherein the sensor generates the sensor signal based on one or more input signals applied to the input of the forward path.

16. (Currently Amended) A controller comprising:

a control circuit comprising:

a forward path that includes an input and an output;

a feedback path coupled to the output and to the input; and

a sensor, which between the input and the output, the sensor for generating a sensor signal based on an input signal applied to the input, wherein the forward path ~~generates~~ is configured to generate an output signal based on the sensor signal, the output signal being sent along the feedback path to the input of the forward path; and

a detector ~~that obtains~~ to obtain an intermediate signal from the forward path between the input and the output, the detector for generating a control signal using the intermediate signal;

wherein the forward path comprises a control device ~~that limits~~ to limit the output signal to a predetermined value, the detector for controlling the control device using the control signal.

17. (Currently Amended) The controller of claim 16, wherein the detector comprises:

a storage device ~~that stores~~ to store a measurement signal; and

a comparator ~~that compares~~ to compare the intermediate signal to the measurement signal and ~~that outputs~~ to output a comparator signal.

18. (Currently Amended) The controller of claim 17, wherein the detector further comprises:

decision logic ~~that receives~~ to receive the comparator signal and ~~that controls~~ to control
the control device in accordance with the comparator signal.

19. (Previously Presented) The controller of claim 16, wherein the control device
comprises a clamp circuit.

20. (Previously Presented) The controller of claim 17, wherein the comparator
comprises at least one of a signal level comparator and a signal sign comparator.